ABSTRACT

It is an object of the present invention to provide a novel fluorescent indicator used for analyzing intermolecular interaction or a change in the intramolecular structure, using fluorescence resonance energy transfer (FRET). The present invention provides a fluorescent indicator, which has a structure such that a donor fluorescent protein and an acceptor fluorescent protein bind to both termini of the target sequence of an analytical substance, wherein the analytical substance binds to or acts on said target sequence, so that the three-dimensional structure of the indicator can be changed, thereby generating fluorescence resonance energy transfer (FRET), said fluorescent indicator being characterized in that the said donor fluorescent protein and/or said acceptor fluorescent protein are circularly permuted fluorescent proteins obtained by substituting the amino acid sequence on the N-terminal side of a wild-type fluorescent protein or a mutant protein thereof with the amino acid sequence on the C-terminal side thereof, and in that the thus obtained fluorescent proteins have a fluorescent peak wavelength substantially identical to that of a florescent protein, which has not yet been subjected to the circular permutation.